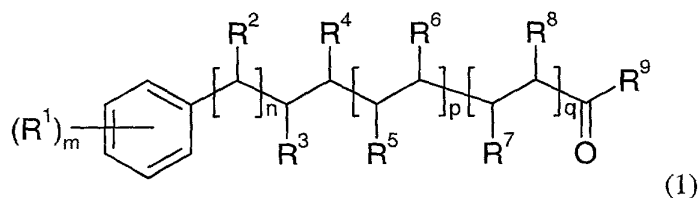


# CLAIMS

1. A method of treating a subject having a skin condition selected from the group of conditions (a) those treatable by stimulation of melanocyte proliferation and (b) melanomas, which comprises administering to the subject an effective amount of a compound of formula (1)



wherein  $n = 0$  or  $1$ ;

$p$  is  $0$  or  $1$ ;

$q$  is  $0$  or  $1$

when  $n = p = q = 0$ ,  $R^3$  and  $R^4$  represent hydrogen or together represent a carbon to carbon double bond;

when  $n = 0$  and one of  $p$  and  $q = 1$ ,  $R^3$  and  $R^4$  together and one of  $R^5$  and  $R^6$  together or  $R^7$  and  $R^8$  together represent carbon to carbon double bonds,  $R^3$  and  $R^4$  together represent a carbon to carbon double bond and  $R^5$  and  $R^6$  or  $R^7$  and  $R^8$  represent hydrogen atoms,  $R^3$  and  $R^4$  represent hydrogen and one of  $R^5$  and  $R^6$  together or  $R^7$  and  $R^8$  together represent carbon to carbon double bonds or  $R^3$ ,  $R^4$ ,  $R^5$ ,  $R^6$ ,  $R^7$  and  $R^8$  all represent hydrogen atoms;

when  $n = 0$  and  $p = q = 1$ ,  $R^3$  and  $R^4$  together and one of  $R^5$  and  $R^6$  together or  $R^7$  and  $R^8$  together represent carbon to carbon double bonds the other of  $R^5$ ,  $R^6$ ,  $R^7$  and  $R^8$  representing hydrogen,  $R^3$  and  $R^4$  together represent a carbon to carbon double bond and  $R^5$  and  $R^6$  or  $R^7$  and  $R^8$  represent hydrogen atoms,  $R^3$  and  $R^4$  represent hydrogen and one of  $R^5$  and  $R^6$  together or  $R^7$  and  $R^8$  together represent carbon to carbon double bonds the other of  $R^5$ ,  $R^6$ ,  $R^7$  and  $R^8$  representing hydrogen,  $R^3$  and  $R^4$  together,  $R^5$  and  $R^6$  together and  $R^7$  and  $R^8$  together represent carbon to carbon double bonds or  $R^3$ ,  $R^4$ ,  $R^5$ ,  $R^6$ ,  $R^7$  and  $R^8$  all represent hydrogen atoms;

or optionally when  $n$  is  $1$   $R^2$  and  $R^3$  together represent a carbon to carbon double bond and one or more of  $R^4$  and  $R^5$  together,  $R^5$  and  $R^6$  together,  $R^6$  and  $R^7$  together or  $R^7$  and

R<sup>8</sup> together represent a carbon to carbon double bond the other of R<sup>4</sup> to R<sup>8</sup> representing hydrogen;

m = 1, 2 or 3;

when m = 1, R<sup>1</sup> represents an alkoxy group having from 1 to 3 carbon atoms or a hydroxy group;

when m = 2, each R<sup>1</sup> independently represents an alkoxy group having from 1 to 3 carbon atoms or the two R<sup>1</sup>'s together represent a 3', 4'-methylenedioxy group;

when m = 3, two R<sup>1</sup>'s together represent a 3', 4'-methylenedioxy group and the other R<sup>1</sup> represents an alkoxy group having from 1 to 3 carbon atoms or a hydroxy group;

R<sup>9</sup> represents a pyrrolidino, piperidino, 4-methylpiperidino or morpholino group, a N-monoalkylamino group of 4 to 6 carbon atoms, a N-monocycloalkylamino group of 4 to 7 carbon atoms, a 3', 4'-methylenedioxy-substituted benzylamino or 2-phenethylamino group or R<sup>9</sup> represents an alkoxy group of 1 to 6 carbon atoms; in any of its E, Z geometrically isomeric forms.

2. The method of Claim 1, wherein the subject is a patient suffering from a melanoma.

3. The method of Claim 1, wherein the subject is a patient suffering from a skin disorder treatable by stimulation of melanocyte proliferation.

4. The method of Claim 1, wherein the skin disorder is vitiligo.

5. The method of Claim 1, wherein the compound is administered topically to the area of the skin to be treated.

6. The method of Claim 1, wherein the compound of formula (1) is one in which: n = 0, one of p and q = 1, R<sup>3</sup> and R<sup>4</sup> together and one of R<sup>5</sup> and R<sup>6</sup> together or R<sup>7</sup> and R<sup>8</sup> together represent the second bond of a carbon to carbon double bond the other of R<sup>5</sup>, R<sup>6</sup>, R<sup>7</sup> and R<sup>8</sup> representing hydrogen, m=2, the R<sup>1</sup> groups together represent 3',4'-

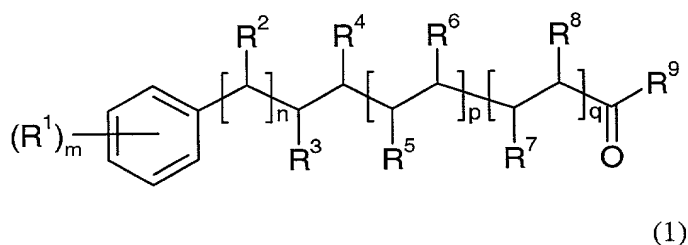
methylenedioxy and  $R^9$  represents a pyrrolidino, piperidino, morpholino, cyclohexylamino or isobutylamino group.

7. The method of Claim 6, wherein the compound is of the E, E geometric configuration.

8. The method of claim 1, wherein the compound of formula (I) is one in which n is 0, one of p and q is 1,  $R^3$ ,  $R^4$ ,  $R^5$ ,  $R^6$ ,  $R^7$  and  $R^8$  represent hydrogen and  $R^9$  is cyclohexylamino

9. The method of Claim 1, wherein the compound of formula (1) is piperine, being the E, E-isomer of the compound of formula (1) in which n = 0, one of p or q = 1,  $R^3$  and  $R^4$  together and one of  $R^5$  and  $R^6$  together or  $R^7$  and  $R^8$  together represent the second bond of a carbon to carbon double bond, the other of  $R^5$ ,  $R^6$ ,  $R^7$  and  $R^8$  representing hydrogen, m = 2, the  $R^1$  groups together represent 3', 4'-methylenedioxy and  $R^9$  represents piperidino, and the geometric configuration is E, E.

10. A method of treating a subject having a skin condition selected from the group of conditions (a) those treatable by stimulation of melanocyte proliferation and (b) melanomas, which comprises administering to the subject an effective amount of a compound of formula (1)



in which

(a) n is 0, p and q are each 0 or 1, m is 2, the  $R^1$ s together represent a 3', 4'-methylenedioxy group,  $R^2$  and  $R^3$ , together with the carbon atoms to which they are attached form a carbon to carbon double bond and, when p and q are each 0 or 1,  $R^5$  and

$R^6$  and  $R^7$  and  $R^8$  together with the carbon atoms to which they are attached, form a carbon to carbon double bond and  $R^9$  is piperidino, or

(b)  $n$  is 0, one of  $p$  or  $q$  is 1 and (i)  $m$  is 3, the  $R^1$ s being 3', 4'-methylenedioxy and 6'-methoxy or (ii)  $m$  is 2, the  $R^1$ s being 3'-hydroxy-4'-methoxy; or  
 5 (iii)  $m$  is 1 and the  $R^1$  is 4'-hydroxy; and  $R^3$  to  $R^9$  are as defined in case (a) above, or

(c)  $n$  is 0, one of  $p$  and  $q$  is 1,  $R^9$  is piperidino, pyrrolidino, isobutylamino or methoxy and all other symbols are as defined in case (a) above, or

(d)  $n$  is 0, one of  $p$  and  $q$  is 1,  $R^4$  and  $R^5$  represent hydrogen atoms and either  $R^2$  and  $R^3$  also do or  $R^2$  and  $R^3$  together with the carbon atoms to which they are attached form a carbon to carbon double bond; and  $m$ ,  $R^1$  and  $R^9$  are as defined in case (a) above;

(e)  $n$  is 0,  $p = q = 1$  and  $R^3$ ,  $R^4$ ,  $R^5$ ,  $R^6$ ,  $R^7$  and  $R^8$  represent hydrogen;

(f)  $n$  is 0, one of  $p$  and  $q$  is 1,  $R^3$ ,  $R^4$ ,  $R^5$ ,  $R^6$ ,  $R^7$  and  $R^8$  represent hydrogen and  $R^9$  is cyclohexylamino; and

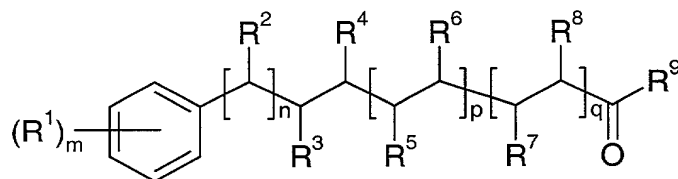
15 in all of which cases (a) to (f) the molecule is in the E,E or all E geometric configuration or in case (a) when  $n$  is 1 may be in the Z,Z, Z,E or E,Z geometric configuration.

11. The method of Claim 10, wherein the subject is a patient suffering from a melanoma.

12. The method of Claim 10, wherein the subject is a patient suffering from a skin disorder treatable by stimulation of melanocyte proliferation.

13. The method of Claim 10, wherein the skin disorder is vitiligo.

14. A compound of formula (I)



(I)

in which n is 0, one of p and q is 1,  $R^3$ ,  $R^4$ ,  $R^5$ ,  $R^6$ ,  $R^7$  and  $R^8$  represent hydrogen and  $R^9$  is cyclohexylamino